

TWO NEW SPECIES OF *PUNTIUS* HAMILTON-BUCHANAN  
(CYPRINIFORMES: CYPRINIDAE) FROM MANIPUR, INDIA,  
WITH AN ACCOUNT OF *PUNTIUS* SPECIES FROM THE STATE<sup>1</sup>

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This paper gives the diagnostic characters of ten species and detailed description of two new species of the genus *Puntius* Hamilton-Buchanan from Manipur. *P. javanicus* and *P. stoliczkanus* are recorded for the first time from the state. *P. ornatus* sp. nov. differs from *P. phutunio* in banding pattern (a single dark transverse band at the 18th-20th lateral line scale around caudal peduncle vs. four dark bands on body). *P. bizonatus* sp. nov. also differs from *P. phutunio* in body form and banding pattern (two dark transverse bands vs. four on the body). A key to the species of *Puntius* of Manipur is provided.

**Key words:** Fish, genus *Puntius*, Manipur, *Puntius ornatus* sp. nov., *Puntius bizonatus* sp. nov.

### INTRODUCTION

Hora (1921) listed and gave a brief systematic account of eight species of *Barbus* Cuvier from Manipur, of which only four are now included in the genus *Puntius* Hamilton-Buchanan. They are: *P. sarana* (Val.), *P. ticto ticto* (Ham.-Buch.), *P. conchoniis* (Ham.-Buch.) and *P. phutunio* (Ham.-Buch.). He identified *P. phutunio* based on the field notebook of Dr. Annandale. Later reports on the fishes of Manipur by Menon (1952), and Menon (1954) did not include additional species of the genus. Vishwanath and Singh (1986) described *P. jayarami* Vishwanath & Tombi. Menon *et al.* (2000) compared specimens of fishes collected from Loktak lake, supposedly identified as *P. phutunio* by Hora (1921) with typical *P. phutunio* collected by W. Rainboth and A. Rahman from Rangpur, Dharala river in Bangladesh. The Manipur specimen turned out to be new and was described as *P. manipurensis* by Menon *et al.* (2000). *P. chola* (Ham.-Buch.) and *P. sophore* (Ham.-Buch.) were first reported by Vishwanath *et al.* (1998) from Chatrickong and Lokchao rivers in Manipur. A recent survey of the fishes of Manipur included twelve species of *Puntius*, including two new species. *P. stoliczkanus* (Day) is recorded for the first time from the State. *P. javanicus* (Bleeker) is an introduced species. This paper gives detailed descriptions of the two new species and diagnostic characters of ten species.

### MATERIAL AND METHODS

Type specimens of the two new species, namely

*Puntius ornatus* and *P. bizonatus* are deposited in the Manipur University Museum of Fishes (MUMF). Measurements and counts follow Jayaram (1999). The body proportions are expressed as percentages of standard length (SL) and head length (HL). For the paratypes, the mean values are given first, followed in parentheses by range as percentages.

Abbreviations used: JL = Juliana Laisram, KNS = K. Nebeshwor Sharma, MSS = M. Shantakumar Sharma; KBD = K. Bimola Devi; R = river; WV = W. Vishwanath.

### KEY TO SPECIES

1. Barbels absent ..... 2
- Barbels present ..... 8
2. Dark circular band around caudal peduncle ..... 3
- No dark circular band around caudal peduncle ..... 4
3. One black band forming a ring around caudal peduncle .....  
..... *P. ornatus*
- One black band forming a ring around caudal peduncle and  
one transverse band on 3<sup>rd</sup>-4<sup>th</sup> lateral line scale .....  
..... *P. bizonatus*
4. Dorsal spine smooth ..... *P. sophore*
- Dorsal spine serrated posteriorly ..... 5
5. Lateral line complete ..... *P. stoliczkanus*
- Lateral line incomplete ..... 6
6. Scales from dorsal fin origin to lateral line 3, pores on lateral  
line 3 to 5 ..... *P. manipurensis*
- Scales from dorsal fin origin to lateral line more than 3, pores  
on lateral line 5 or more ..... 7
7. Dorsal fin tipped with black ..... *P. conchoniis*
- Dorsal fin not tipped with black ..... *P. ticto ticto*
8. Barbels 1 pair, body marked with two conspicuous dark  
blotches, first behind operculum and second near base of  
caudal fin ..... *P. chola*
- Barbels 2 pairs, body without dark blotches ..... 9

9. Dorsal spine finely serrated posteriorly ..... 10  
 — Dorsal spine strongly serrated posteriorly ..... 11  
 10. Scales from dorsal fin origin to lateral line 6 ..... *P. orphoides*  
 — Scales from dorsal fin origin to lateral line 5 ..... *P. sarana*  
 11. Lateral transverse scales 5/1/3 ..... *P. jayarami*  
 — Lateral transverse scales 6/1/4 ..... *P. javanicus*

***Puntius bizonatus* sp. nov.**

(Fig. 1)

**Holotype:** MUMF 3017., 35.8 mm SL. Lokchao R., Moreh. 24-26.iii.1999, WV & party.

**Paratypes:** MUMF 3017A/5., 26.9-39.4 mm SL., Lokchao R., Moreh, same collection data as holotype.

**Description:** D. iii, 8; P. i, 13; V. i, 8; A. iii, 5; C. 9+8. Proportional measurements and counts are in Table 1. A small sized *Puntius* with two dark transverse bands across the body. Body deep, 37(36.5-39.6)% of SL. Barbels absent. Both dorsal and ventral profiles slightly curved. Mouth small, subterminal and crescentic, snout smooth (23-26% HL), eyes moderate, visible from ventral side, scales large. Origin of dorsal fin slightly behind that of ventral origin, its last simple ray serrated and shorter than body depth. Pectoral fin does not reach anterior origin of ventral fin and the latter does not reach anal origin. Dorsal fin inserted midway between tip of snout and base of caudal fin. It has a few black streaks with the last simple ray osseous and serrated. Other fins dusky. Caudal fin deeply forked. Lateral line incomplete, 4-9 piercing scales; 21 in longitudinal series and 8 in rows. Branchiostegal rays 3. Pharyngeal teeth in 3 rows 2,3,5-5,3,2. Gill rakers 5+15-18.

**Colour:** Silvery white. Two vertical black bands on body; the anterior at the third to fourth scales of lateral line; the other on the caudal peduncle, 4-5 scales ahead of the caudal fin rays. Dorsal fin reddish, streaked

with black. Pectoral and pelvic fins dusky, anal fin reddish, caudal with dark margin. Scales have blackish streaks on the dorsal part of body.

**Distribution:** India: Lokchao R., Moreh, Manipur.

**Etymology:** This species is named after the bizonal bands on its body.

**Remarks:** It is abundantly found only in the Chindwin drainage in Manipur. The beautiful bizonal bands give the fish an attractive appearance, which may prove to be a good aquarium fish. *P. bizonatus* is similar to *P. phutunio* in having dark bands on body, finely serrated osseous dorsal fin ray. However, it differs in having only two bands, one on 3rd-4th scale of lateral line and another at caudal peduncle vs. four bands on *P. phutunio*. The former also has a shorter snout length (5.9 vs. 7.8% of SL) and narrower inter-orbital space (9.9 vs. 11.3% of SL).

The species under description differs from *P. cumingi* in having a lateral line series of 22 vs. 19-21, lateral transverse scales of 4/1/2 vs. 3½-4/1/3½, circumpeduncular scales of 12 vs. 8-10, pre-anal scales of 14-15 vs. 10-11, pre-pelvic scales of 8-10 vs. 5-6, gill rakers of 5+15-18 vs. 9+13. *P. cumingi* however, is distributed only in Sri Lanka. It differs from *P. puntio* in having two bands vs. one, one osseous and serrated last simple dorsal fin ray vs. weakly osseous and smooth one, incomplete lateral line of 5-7 pores vs. a complete one. *P. bizonatus* differs from *P. gelius* in having two bands vs. three bands, lateral line series of 22 vs. 23-24, lateral transverse scales of 4/1/2 vs. 4-5/1/3-4, circumpeduncular scales of 12 vs. 6-8, pre-anal scales of 14-15 vs. 13 and pre-pelvic scales of 8-10 vs. 6 scales. Comparison of the new species with its related species is given in Table 2.

**Maximum SL:** 39.4 mm

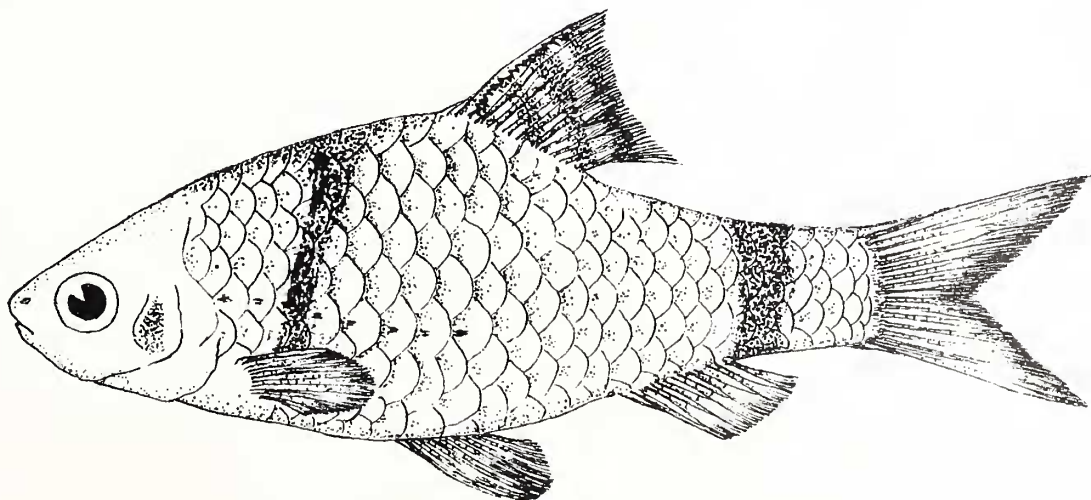


Fig.1: *Puntius bizonatus* sp. nov.

Table 1: Morphometric data of *P. ornatus* sp. nov., *P. phutunio* (Ham.) and *P. bizonatus* sp. nov. in % SL (except SL given in mm)

	<i>P. ornatus</i> sp. nov			<i>P. phutunio</i> (Ham) ZSI F10929/1	<i>P. bizonatus</i> sp. nov		
	Holotype MUMF 3028	Paratypes MUMF 3028 A/7 MUMF 3028B/2	S.D		Holotype MUMF 3017	Paratypes MUMF 3017 A/5	S.D
Standard Length	42.0	30.9-42.0		28.4	35.8	26.9-39.4	
Body depth	35.0	35.9(34.7-38.7)	1.9	39.8	35.8	37.8(36.5-39.6)	1.6
Caudal length	29.3	29.2(24.7-32.2)	2.3	34.9	32.4	28.3(25.3-29.7)	2.2
Head length	27.4	26.4 (24.5-27.4)	1.1	27.8	26.0	25.9(24.4-27.5)	1.0
Head depth (at occiput)	22.4	20.9(20.0-22.5)	0.9	24.3	23.2	22.2(20.7-23.9)	1.1
Head depth (at eye)	15.7	15.5(14.0-17.1)	0.8	18.0	16.8	16.5(15.5-17.1)	0.5
Snout length	5.7	5.9(4.8-7.5)	1.0	7.8	5.6	5.9(5.2-7.1)	0.6
Eye diameter	7.9	8.5(7.9-10.8)	0.9	9.2	8.1	8.2(7.5-8.9)	0.5
Inter-orbital space	8.8	9.9(9.2-10.8)	0.6	11.3	9.5	9.0(7.7-10.2)	0.9
Head width (at nares)	9.5	8.6(6.9-9.3)	0.7	-	8.4	8.5(7.7-9.3)	0.6
Max. head width	15.2	14.0(12.9-14.6)	0.7	16.6	15.4	14.1(12.7-15.1)	1.0
Gape width	5.7	4.8(4.2-5.2)	0.4	6.0	6.1	5.8(5.1-6.3)	0.4
Inter-narial space	5.5	5.5(4.4-6.2)	0.5	7.4	4.7	4.8(4.1-6.3)	0.7
Body width (dorsal origin)	15.2	15.7(9.6-17.5)	2.1	-	15.6	14.7(12.3-16.1)	1.4
Body width (at anal origin)	11.0	10.3(8.4-11.5)	1.2	-	11.5	10.6(8.6-11.9)	1.2
Length of Caudal ped.	16.4	17.0(15.5-21.7)	2.1	15.1	19.8	16.1(15.2-18.0)	1.8
Height of Caudal ped.	13.8	13.5(12.6-15.1)	0.8	16.2	15.1	4.6(13.7-15.1)	0.5
Pre-dorsal length	54.8	50.8(48.2-53.3)	2.4	46.8	50.8	48.9(46.7-51.3)	1.9
Post-dorsal length	45.5	49.4(45.2-54.6)	3.2	51.4	50.8	49.5(47.5-51.7)	1.7
Pre-pelvic length	51.2	50.0(44.3-50.1)	2.4	47.2	50.0	45.0(34.3-48.6)	5.5
Pre-anal length	73.6	72.1(66.1-74.0)	2.6	70.1	72.3	69.6(68.4-71.1)	1.4
Pre-anus length	73.1	69.2(65.5-71.8)	2.4	69.7	71.2	67.1(65.8-69.5)	2.2
Dorsal fin base length	14.8	16.0(14.6-16.9)	0.9	19.0	18.4	17.5(16.2-19.5)	1.1
Dorsal fin height	21.4	20.0(17.2-24.9)	2.4	21.5	19.6	20.9(18.4-22.1)	1.5
Pectoral fin length	18.8	19.1(16.9-21.1)	1.3	23.6	22.3	20.3(18.1-22.0)	7.6
Ventral fin length	20.2	20.5(18.4-22.9)	1.3	25.0	20.7	20.9(19.0-22.9)	1.2
Anal fin base length	8.8	8.9(8.1-10.7)	0.8	12.7	11.2	10.9(10.0-13.0)	2.9
Anal fin height	14.5	16.2(15.5-18.4)	1.3	-	17.9	17.9(15.7-19.7)	3.3
Pre-dorsal scales	9	8-9		8	8	8	
Circumped. scales	12	11		13	12	12	
Pre-pelvic scales	10	11		9	9	8-10	
Pre-anal scales	16	18		16	13	14-15	
Lateral line series	24	20-25		20	21	22	
Lateral line rows	8	8		8	8	9	
Lateral line pores	9	5-9 and 22		5	9	5-7	
LCP/HCP	1.2	1.3		0.9	1.3	1.1	

*Puntius ornatus* sp. nov.  
(Fig. 2)

**Holotype:** MUMF 3028, 42.0 mm. SL, Lokchao R., Moreh, 24.iii.1999, WV and party.

**Paratypes:** MUMF 3028 A/7., 30.9-42.0 mm SL, same collection data as holotype. MUMF 3028B/2., 45.1 mm SL, Lokchao R., Moreh, 14.vii.2000, KNS & MSS.

**Description:** D. iii, 8; P. i, 11-12; V. i, 8; A. iii, 5-6; C. 9+8. Proportional measurements and counts are

given in Table 1. A small sized *Puntius* with a wide rounded dark band around caudal peduncle. Body moderately deep, its depth longer than head length (35.9% in SL). Both dorsal and ventral profile slightly curved. Mouth small, subterminal and crescentic, without any barbels. Eyes and scales moderate, eyes visible from ventral surface, snout smooth. Caudal peduncle slender. Dorsal fin inserted nearer caudal fin base than snout tip, its last simple ray osseous, serrated posteriorly, shorter than body depth. Pectoral fin inserted in a line vertical to the gill opening, does not reach anterior origin of



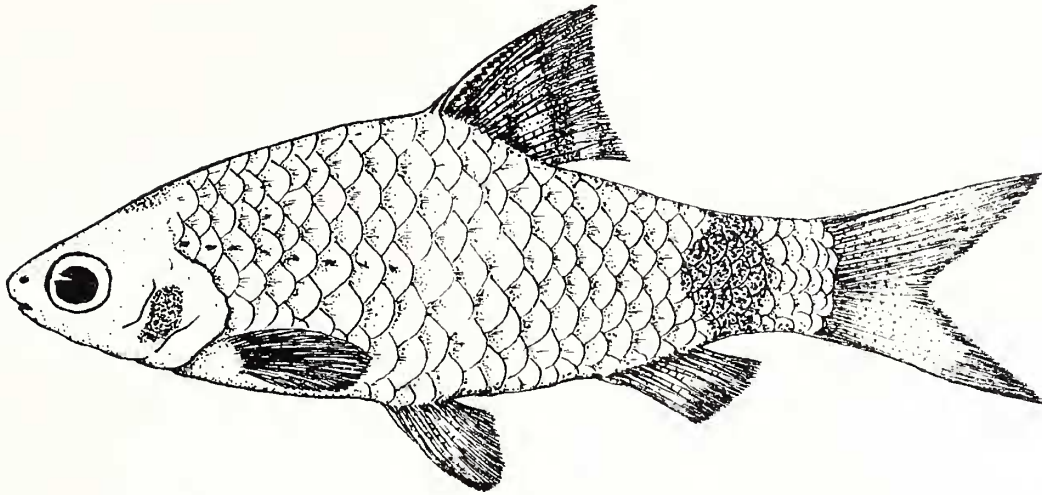


Fig. 2: *Puntius ornatus* sp. nov.

ventral fin and the latter does not reach anal opening. Caudal fin deeply forked. Lateral line with 5-21 pores. Scales on lateral line series 23-24. Predorsal scales 8 or 9. Gill rakers 5+18, pharyngeal teeth low and weak, in three rows 2,3,5 - 5,3,2. Branchiostegal rays 3.

**Colour:** Silvery, flanks sometimes shot with reddish tinge. Wide rounded dark band around caudal peduncle, middle portion of band darker and rounded. Dorsal fin orange, tipped with black and a few rows of streaks. Pectoral and pelvic fins dusky. Anal fin yellowish, caudal with a dark margin. The scales are edged with black in the dorsal part of the body.

**Distribution:** India: Lokchao R., Moreh, Manipur.

**Etymology:** This species is named after its ornamental band around the caudal peduncle.

**Remarks:** The species is small, but attractive, and can be a popular aquarium fish. *P. ornatus* sp. nov. is similar to *P. phutunio* in having finely serrated and osseous last simple dorsal fin ray and in the absence of barbels. However, the new species is different in banding pattern, namely a single dark transverse band encircling the caudal peduncle (18-20th scale of lateral line) vs. four dark bands: first over pectoral, second from below dorsal spine, third from posterior end of dorsal and fourth across caudal peduncle. It also differs from *P. phutunio* in having a more slender caudal peduncle (depth of caudal peduncle 9.9(8.4-11.5)% of SL vs. 16.2% of SL). *P. ornatus* may have a complete or incomplete lateral line, whereas *P. phutunio* always has an incomplete lateral line.

*Puntius ornatus* differs from *P. cumingi* in having a single band forming a ring around the caudal peduncle vs. two bands, lateral line series of 20-25 vs. 19-21, lateral transverse scale of  $4\frac{1}{2}/1\frac{1}{2}$  vs.  $3\frac{1}{2}-4/1\frac{1}{3}$ , circumpeduncular scales of 11-12 vs. 8-10, pre-anal

scales of 18 vs. 10-11. It differs from *P. gelius* in having a single band vs. three bands, circumpeduncular scale of 11-12 vs. 6-8, pre-anal scales of 18 vs. 13, and pre-pelvic scales of 11 vs. 6. It greatly differs from *P. puntio*, which also has a single band around the caudal peduncle, having an osseous, serrated last unbranched dorsal fin ray vs. weakly osseous and smooth last unbranched dorsal fin ray. It also differs from *P. puntio* in having a variably incomplete lateral line vs. a complete lateral line. Comparison of the new species with its related species is given in Table 2.

**Maximum SL:** 42 mm.

**Comparative Material:** *Puntius phutunio*, ZSI F10929/1, Rocky streams around Kamaing, Myitkyina district, Upper Burma, December 23-30, 1926, B. Chopra.

### *Puntius chola* (Hamilton-Buchanan)

*Cyprinus chola* Hamilton-Buchanan, 1822, *Fish. Ganges*: 312, 389 (type locality: North eastern part of Bengal)

**Material examined:** MUMF 3020/2., 44.6-61.9 mm SL, Kharungpat, 21.viii.1998, KBD; MUMF 3021/1., 71.3 mm SL, Lokchao R., Moreh, 24-26.iii.1999, WV & party.

**Local Name:** Phabou nga (Manipuri).

**Diagnosis:** A *Puntius* with a deep and compressed body. A single maxillary pair of barbels present. Last simple dorsal ray moderately strong and smooth. Lateral line complete with 24-28 scales. Scales from dorsal fin origin to lateral line 6 and those from lateral line to pelvic fin origin 4. Predorsal scales 11, circumpeduncular scales 14, pre-pelvic scales 11, pre-anal scales 19.

**Colour:** Body silvery, with olive green dorsally, a black blotch at the far end of the caudal peduncle between 21st and 23rd lateral line scales and another at the base of anterior dorsal fin ray. A dark blotch may or may not be present behind operculum.

**Distribution:** INDIA: Throughout; Bangladesh, Myanmar, Pakistan, Sri Lanka, Nepal.

**Remarks:** The bright colouration of this fish especially during breeding season gives good ornamental value. Vishwanath *et al.* (1998) reported it from Chatrickong river in Manipur for the first time.

***Puntius conchoni* (Hamilton-Buchanan)**

*Cyprinus conchoni* Hamilton-Buchanan. *Fish. Ganges*: 317, 389; Cuv. and Val. xvi, p. 394.

**Material examined:** MUMF 3027/3., 44.6-47.8 mm SL, Barak R., 5.viii.1999, KNS.

**Local name:** Phabou nga (Manipuri).

**Diagnosis:** A *Puntius* with no barbels, incomplete lateral line, pores ending after 7-12 scales, 5 scales between origin of dorsal fin and lateral line and 4 between lateral line and root of pelvic fin. Predorsal scales 8, circumpeduncular scales 12, pre-pelvic scales 12, pre-anal scales 18. Body comparatively deep (39.7-44.2% SL). Last simple dorsal ray osseous, moderately strong and serrated, its height less than head length.

**Colour:** A big black blotch on the caudal peduncle and a faint one near the operculum, which may be absent. Fins yellow and red. Dorsal fin tipped with a black blotch.

**Distribution:** INDIA: Brahmaputra, Barak, Ganga, Mahanadi, Cauvery rivers. PAKISTAN: Punjab.

**Remarks:** Very similar to *P. stoliczkanus* Day but differs in having incomplete lateral line and dorsal fin tipped with a black blotch. It is an ornamental fish commonly known as Rosy Barb.

***Puntius javanicus* (Bleeker)**

*Barbus gonionotus* Bleeker, *Verh. Bat. Gen.* xiii. (1849) 1850, *Ichth. Midden Oost -Java*, p. 15.

**Material examined:** MUMF 3031/1., 191.8 mm SL, cultivated species.

**Local name:** Japan puthi (Manipuri).

**Diagnosis:** A medium sized *Puntius* with four barbels, complete lateral line with 30 pores. Scales from dorsal fin origin to lateral line 6 and from lateral line to pelvic fin origin 4, predorsal scales 11, circumpeduncular scales 19, pre-pelvic scales 15, pre-anal scales 25, last unbranched dorsal ray strong, osseous and serrated. Depth of body high (40.3% SL). Anal and dorsal fins emarginate.

**Colour:** Flanks are bright golden with a darker tinge dorsally. Fins reddish.

**Remarks:** This moderately sized fish is an introduced species to Manipur. It is rarely sold in the market. Eschmeyer (1998) puts this species under *Barbus* Cuvier.

***Puntius jayarami* Vishwanath & Tombi**

*Puntius jayarami* Vishwanath & Tombi, 1986. *Rec. zool. Surv. India*, 83 (1&2): 129, Fig. I (type locality: Chakpi stream, Chakpikarong, Manipur); Jayaram 1991, *Rec. zool. Surv. India*, Occ. Paper No. 135: 124 (revision)

**Material examined:** MUMF 3023/2., 82.9-92.7 mm SL, Lokchao R., Moreh, 24-26.iii.1999, WV and party.

**Local name:** Heikak nga / Naphet nga.

**Diagnosis:** A *Puntius* species with four barbels, complete lateral line with 28-30 pores, 5 scales from lateral line to origin of dorsal fin and 3 from lateral line to origin of pelvic fin. Predorsal scales 10, circumpeduncular scales 13-14, pre-pelvic scales 17, pre-anal scales 27, last unbranched dorsal ray osseous, strong and denticulate. Snout pointed. Eyes moderate.

**Colour:** Silvery with reddish fins.

**Distribution:** INDIA: Manipur river, Manipur.

***Puntius manipurensis* Menon, Rema Devi & Vishwanath**

*Puntius manipurensis* Menon, Rema Devi & Vishwanath 2000. *J. Bombay nat. Hist. Soc.* 97(2): 263-268.

**Material examined:** MUMF 3026/2., 38.8-45.4 mm SL., Manipur R., 15.ix.1998, WV. MUMF 3027/2., 31.1-34.2 mm SL, Canchipur, 16.vii.1999, JL.

**Local name:** Ngakha meingangbi (Manipuri).

**Diagnosis:** A *Puntius* with no barbels, incomplete lateral line. Perforated scales 3-5. 20 scales in lateral line series and 8 lateral transverse rows of scales. Predorsal scales 9, circumpeduncular scales 8, pre-pelvic scales 10, pre-anal scales 16, last unbranched dorsal ray osseous, serrated.

**Colour:** Body dark silvery, with two black blotches, one at the 3<sup>rd</sup>-4<sup>th</sup> scale near the operculum and the other at the 17<sup>th</sup> scale near the caudal peduncle; these are less distinct than in *P. ticto*. The fins and caudal peduncle scarlet red in colour; males are more brightly coloured. Their scales, especially on the dorsal part of body have black dots. Females exhibit a subdued pink on the body and fins.

**Distribution:** INDIA: Manipur valley.

Table 2: Morphometry and distribution of some banded *Puntius* species

Characters	<i>Puntius cumingi</i> (Gunther), 1868	<i>Puntius puntio</i> (Hamilton), 1822	<i>Puntius gelius</i> (Hamilton), 1822	<i>Puntius phutunio</i> (Hamilton), 1822	<i>Puntius ornatus</i> sp. nov.	<i>Puntius bizonatus</i> sp. nov.
No. of barbels	nil	nil	nil	nil	nil	nil
Last unbranched dorsal ray	osseous, serrated	weakly osseous smooth	osseous, serrated	osseous, serrated	osseous, serrated	osseous, serrated
Lateral line	incomplete after 5-6 scales	complete	incomplete after 4-6 scales	incomplete after 3-5 scales	incomplete after 5-22 scales	incomplete after 5-7 scales
Lateral line scales	19-21	23	23-24	20-23	20-25	22
Lateral transverse	3½-4/1/3½	5/1/2½	4-5/1/3-4	3½-4/1/3	4½/1/2½	4/1/2
Pre-dorsal scales	9-11	8	8	8	8-9	8
Circumpeduncular scales	8-10	-	6-8	13	11-12	12
Pre-anal scales	10-11	-	13	16	18	14-15
Pre-pelvic scales	5-6	-	6	9	11	8-10
Gill rakers	9+13	-	-	0+9	5+18	5+15-18
LCP/HCP	1.6-1.75	-	1.2-3.0	0.9	1.3	1.1-1.3
Colour	two vertical black bands; one above pectoral and another above anal fins	single broad vertical band around caudal peduncle	three black bands; one over occiput, another over anal fin and a third over caudal peduncle	four dark bands; first over pectoral fin, second from below dorsal spine, third from posterior end of dorsal and fourth across caudal peduncle	a single black band around caudal peduncle forming a ring	two black bands; one around caudal peduncle and another transverse over 3rd-4th scale anteriorly
Distribution	Sri Lanka	India: West Bengal, Burma (now Myanmar)	India: Orissa, West Bengal, Assam	Widely distributed	India: Lokchao R. Manipur	India: Lokchao R. Manipur



**Remarks:** Although not of much food value because of its small size, it holds a good prospect as an ornamental fish. In the breeding season, i.e. July-August, the males give chase to the female.

***Puntius orphoides* (Valenciennes)**

*Barbus orphoides* Valenciennes, 1842, *Hist. nat. Poiss.*, 16: 193 (type locality: Java)

**Materials examined:** MUMF 3025/2., 77.9-78.0 mm, Lokchao R., Moreh, 24-26.iii.1999, WV and party.

**Local name:** Nganoi/ Ngahou (Manipuri).

**Diagnosis:** A *Puntius* species with four barbels, lateral line complete with 28-29 pores. Scales from dorsal fin origin to lateral line 6 and from lateral line to pelvic fin origin 4, predorsal scales 11-12, prepelvic scales 12-14. Last unbranched dorsal ray osseous, strong and serrated, circumpeduncular scales 14-16. Depth of body 33-36% of SL. Anal and dorsal fins not emarginated.

**Colour:** Silvery with reddish fins.

**Distribution:** INDIA: Loktak lake, Imphal, Manipur. Borneo, Java, Malaya, Myanmar, Thailand.

**Remarks:** Once reported to be plentiful in the central plain. At present very rare in the valley. A fish of good food value.

***Puntius sarana* (Hamilton-Buchanan)**

*Cyprinus sarana* Hamilton-Buchanan, 1822, *Fish. Ganges*: 307 (type locality: ponds and rivers of Bengal).

**Materials examined:** MUMF 3024/1., 195 mm, Jiri R., Jiribam, 19.ix.1998, WV and party.

**Local Name:** Nganoi/ Ngahou (Manipuri).

**Diagnosis:** Body deep and compressed, its depth 34.2% of standard length. Barbels two pairs, rostral as long as orbit, maxillary longer. Dorsal fin inserted slightly ahead of the middle of the body. Dorsal spine osseous and finely serrated posteriorly. Lateral line complete with 32 scales. 5 scales above lateral line row and 4 below it. Predorsal scales 9, circumpeduncular scales 16, prepelvic scales 19, pre-anal scales 27.

**Colour:** Silvery white, olivaceous dorsally. Body with a golden reflection, cheeks golden. Fins dusky brown to orange.

**Distribution:** Afghanistan. Pakistan. India: Ganga-Brahmaputra drainage, peninsular India north of Krishna river.

**Remarks:** Found only in Barak drainage in Manipur. Eschmeyer (1998) puts this species under genus *Barbus* Cuvier.

***Puntius sophore* (Hamilton-Buchanan)**

*Cyprinus sophore* Hamilton-Buchanan, 1822, *Fish. Ganges*: 310, 389 (type locality: ponds and rivers of Gangetic Provinces)

**Material examined:** MUMF 3021/1., 71.3 mm SL, Lokchao R., Moreh. 24-26.iii.1999, WV & party.

**Local name:** Phabou nga (Manipuri), Nga-khon-ma (Burmese)

**Diagnosis:** This species has a relatively deep body, its dorsal profile more convex than ventral. Head short, mouth terminal. Dorsal fin inserted equidistant between tip of snout and base of caudal fin. Dorsal spine osseous and smooth, lateral line complete with 23-24 pores, 4 scales above lateral line and 3 from lateral line to pelvic fin origin. Predorsal scales 8-10, circumpeduncular scales 12, pre-pelvic scales 12, pre-anal scales 16-17, barbels absent.

**Colour:** Silvery, back grey-green to brownish; flanks with a somewhat bluish lustre, underside white. A deep black round blotch at base of caudal fin between 22<sup>nd</sup> and 24<sup>th</sup> scales and another at the base of anterior dorsal ray.

**Distribution:** INDIA: Chatrickong river, Manipur valley; Pakistan; Bangladesh; Myanmar; Yunnan.

**Remarks:** *Puntius sophore* is very similar to *P. chola* but it can be easily distinguished from the latter as it has no barbels. The fish exhibits bright colouration with a reddish longitudinal band along the sides during the breeding season. It can be a good aquarium fish. Talwar and Jhingran (1991) reported that the fish matures at 7-8 cm in SL. The authors also reported that the species has medicinal value in Tamil Nadu. Vishwanath *et al.* (1998) reported it for the first time from Chatrickong and Lokchao rivers in Manipur.

***Puntius stoliczkanus* (Day)**

*Barbus McClellandi* Day, *Proc. Zool. Soc.* 1869, p. 619 (not Cuv. and Val.)

*Barbus stoliczkanus* Day, *Journal Asiatic Soc. Bengal*, 1871, pt. ii. p. 328.

**Material examined:** MUMF 3018/4., 48.5-51.4 mm SL, Lokchao R., Moreh. 24-26.iii.1999, WV & party, MUMF 3019/2., 43.1-50.6 mm SL, Litan stream., WV.

**Local name:** Phabou nga (Manipuri).

**Diagnosis:** A *Puntius* with no barbels, body comparatively deep, about 42% SL. Complete lateral line with 20-24 scales, 4 scales from lateral line to origin of dorsal and 4 from lateral line to anterior root of pelvic fin. Last unbranched dorsal ray osseous, serrated. A large spot at the caudal peduncle.

**Colour:** Body silvery, the spot at the caudal peduncle large and black.

**Distribution:** INDIA: Chindwin drainage, Manipur; MYANMAR: Putao.

**Remarks:** *P. stoliczkanus* is reported from the state of Manipur and from India for the first time in this paper.

***Puntius ticto ticto* (Hamilton-Buchanan)**

*Cyprinus ticto ticto* Hamilton-Buchanan, 1822, *Fish. Ganges*: 314, 398, pl. 8, fig. 87 (type locality: south-east part of Bengal).

**Material examined:** MUMF 3030/1., 47.5 mm SL, Imphal valley, 19.viii.1998, JL.

**Local name:** Ngakha (Manipuri).

**Diagnosis:** This *Puntius* has a compressed body. Dorsal fin inserted nearer caudal fin base than the tip of the snout. Dorsal spine serrated posteriorly. Predorsal scales 10, circumpeduncular scales 11, pre-pelvic scales 14, pre-anal scales 20. Caudal fin forked. Barbels absent, lateral line incomplete. Perforated scales 7 anteriorly,

26 scales in lateral series and 11 on lateral transverse rows. Two black blotches, one near gill opening and another at the posterior portion of anal fin base. The latter blotch is found further forward than in all other *Puntius* species having two blotches. Anterior spot is always present.

**Colour:** Body silvery with two black blotches, one at the base of caudal fin and another at the edge of operculum. In freshly dead specimens, fins and flanks are reddish. The operculum is shot with golden red during the breeding season.

**Distribution:** Widely distributed in India, Bangladesh, Sri Lanka, Pakistan and Myanmar.

**Remarks:** Hora (1921) reported the fish to be the commonest *Puntius* in the Manipur Valley. Though small in size, it has high food value among the locals.

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